

34. (new) The antibody of claim 19, wherein the immunogenic peptide comprises the immunogenic repeat region of the acidic repeat protein.

35. (new) The immunogenic composition of claim 23, wherein the mammal is a human.

36. (new) The immunogenic composition of claim 23, wherein the immunogenic peptide comprises an amino acid sequence as shown in SEQ ID NOs: 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26 or conservative variations thereof.

REMARKS

Amendments

By this amendment, claims 2, 7-10, 13, 17, 23, 27 and 29 are amended and new claims 30-36 are added. The amendments to claims 2, 7, 13, 27 and 29 are amendments of form only. The amendments to claim 8 are supported in the specification at least at page 1, lines 24-25 and page 16, line 29 to page 17, line 2. The amendments to claims 9-10 are supported in the specification at least at page 16, line 29 to page 17, line 2. The amendments to claims 17 and 23 are supported in the specification at least at page 17, line 12 to page 18, line 5.

New claims

Claims 30-36 are added by this amendment. Support for these claims may be found throughout the specification and at least in the following specific locations:

Claim 30 is supported in the specification at Figures 14-17, and in SEQ ID NOs: 20, 22, 24 and 26 of the accompanying sequence listing.

Claims 31 and 32 are supported in the specification at page 17, line 12 to page 18, line 5.

Claim 33 is based on original claim 17.

Claim 34 is supported in the specification at page 22, lines 6-12.

Claim 35 is supported in the specification at page 24, lines 2-10.

Claim 36 is based on original claim 23.

No new matter is added. After entry of this amendment, claims 1- 36 are pending in the application. Examination of the patent application is respectfully requested.

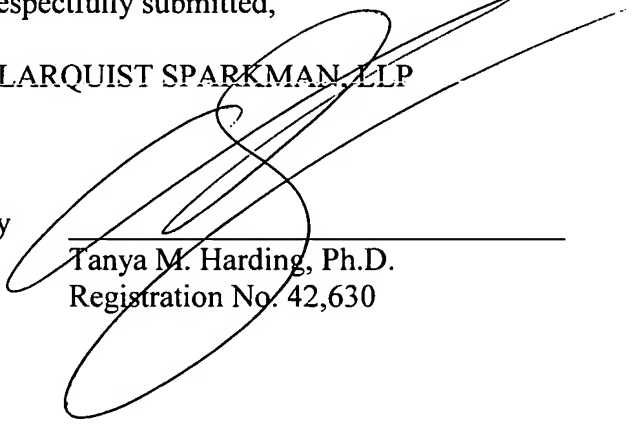
CONCLUSIONS

If any minor matters remain to be discussed prior to examination, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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**Marked-up Version of Amended Claims
Pursuant to 37 C.F.R. §§ 1.121(b)-(c)**

2. (amended) The method of claim 1, wherein the isolated, immunogenic *Treponema pallidum* peptide is comprises an immunogenic ~~a peptide within a repeat region of the acid~~ acidic repeat protein.
7. (amended) The method of claim 1, wherein detecting the presence of the complex indicates the presence of a the ~~disease selected from the group consisting of~~ syphilis, yaws, ~~and~~ or bejel.
8. (amended) The method of claim 1, wherein the immunogenic peptide comprises the amino acid sequence shown in SEQ ID NO: 2, or a conservative variation thereof, and wherein the presence of the complex indicates the presence of syphilis.
9. (amended) The method of claim 1, wherein the immunogenic peptide comprises the amino acid sequence shown in SEQ ID NO: 4, or a conservative variation thereof, and wherein the presence of the complex indicates the presence of yaws.
10. (amended) The method of claim 1, wherein the immunogenic peptide comprises the amino acid sequence shown in SEQ ID NO: 6, or a conservative variation thereof, and wherein the presence of the complex indicates the presence of bejel.
13. (amended) The method of claim 12, wherein the label ~~is selected from the group consisting of~~ comprises an electrochemiluminescent label, a chemiluminescent label, an enzymatic label, a bioluminescent label, ~~and~~ or a fluorescent label.
17. (amended) An isolated, ~~immunogenic~~ *Treponema pallidum* acidic repeat protein or immunogenic peptide thereof, comprising an amino acid sequence as shown in SEQ ID NOs: 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26 or conservative variations thereof.

23. (amended) An immunogenic composition comprising a pharmaceutically acceptable carrier and an isolated, immunogenic *T. pallidum* acidic repeat protein or immunogenic peptide thereof in an amount sufficient to induce a protective immune response to *T. pallidum* in a mammal, ~~the immunogenic peptide comprising an amino acid sequence as shown in SEQ ID NOs: 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26 or conservative variations thereof.~~

27. (amended) The method of claim 1, wherein the immunogenic peptide comprises an amino acid sequence ~~having the sequence as~~ shown in SEQ ID NO: 20.

29. (amended) A kit for detecting *T. pallidum* in a biological sample using the method of claim 16, comprising an antibody ~~to~~ specific for an immunogenic *T. pallidum* peptide of an acidic repeat protein, and instructions for carrying out the method of claim 16.